

Title (en)  
Fuel injection system

Title (de)  
Brennstoffeinspritzsystem

Title (fr)  
Système d'injection de carburant

Publication  
**EP 1593824 A2 20051109 (EN)**

Application  
**EP 05009796 A 20050504**

Priority  
JP 2004137702 A 20040506

Abstract (en)  
A fuel injection system includes an injector (3), a controller (5), and a cylinder internal pressure sensor (26). The injector (3) injects fuel to an engine (1). The controller (5) controls injection start timing (T) of the injector (3), an injection amount (Q), and a supply pressure (P) of the injected fuel. The cylinder internal pressure sensor (26) detects one of a cylinder internal pressure and a heat release rate of the internal combustion engine (1). The controller (5) has a standard estimation means (5) and a correction means (5). The standard state estimation means (5) obtains a standard state of one of the cylinder internal pressure and the heat release rate upon fuel injection from the injector (5). The correction means (5) corrects at least one of the injection start timing (T), the injection amount (Q), and the supply pressure (P) in a direction to eliminate a difference that exists between the standard state obtained by the standard state estimation means (5) and one of the cylinder internal pressure and the heat release rate detected by the cylinder internal pressure sensor (26).

IPC 1-7  
**F02D 35/02**; **F02D 41/40**

IPC 8 full level  
**F02D 35/02** (2006.01); **F02D 45/00** (2006.01); **F02D 41/14** (2006.01); **F02D 41/38** (2006.01); **F02D 41/40** (2006.01); **G01N 11/08** (2006.01)

CPC (source: EP US)  
**F02D 35/023** (2013.01 - EP US); **F02D 41/3836** (2013.01 - EP US); **F02D 41/401** (2013.01 - EP US); **F02D 2200/0602** (2013.01 - EP US); **F02D 2200/0606** (2013.01 - EP US); **F02D 2200/0612** (2013.01 - EP US); **G01N 11/02** (2013.01 - EP US); **Y02T 10/40** (2013.01 - EP US)

Citation (applicant)  
• WO 2004022959 A1 20040318 - TOYOTA MOTOR CO LTD [JP], et al  
• US 2003127073 A1 20030710 - BUCK RAINER [DE], et al  
• DE 19705463 A1 19980820 - BOSCH GMBH ROBERT [DE]  
• DE 10047812 A1 20020418 - VOLKSWAGEN AG [DE]  
• FR 2846373 A1 20040430 - PEUGEOT CITROEN AUTOMOBILES SA [FR], et al  
• EP 1318288 A2 20030611 - DENSO CORP [JP]

Cited by  
EP2754876A1; EP2998547A1; CN105723074A; EP2136057A1; US9845743B2; US8032293B2; WO2007065573A1; WO2013167242A1; WO2015071753A3; US8239116B2; US8789514B2; WO2009152924A1; WO2008034754A1; EP2084381A4

Designated contracting state (EPC)  
DE FR GB

Designated extension state (EPC)  
AL BA HR LV MK YU

DOCDB simple family (publication)  
**EP 1593824 A2 20051109**; **EP 1593824 A3 20110831**; **EP 1593824 B1 20190417**; CN 100406703 C 20080730; CN 1693690 A 20051109; JP 2005320872 A 20051117; JP 4081819 B2 20080430; US 2005247285 A1 20051110; US 7013865 B2 20060321

DOCDB simple family (application)  
**EP 05009796 A 20050504**; CN 200510070137 A 20050430; JP 2004137702 A 20040506; US 11832405 A 20050502